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AGRICULTURAL MEMORANDUM NO 389

Frequency of Significant Summer Soil Moisture Deficits

L P SMITH

The maximum actual summer soil moisture deficits can be conveniently divided into 4 categories, namely:

Class I — S.M.D. max less than 1 inch
- dangers of poaching, leaching and waterlogging, but no drought check to growth

Class II — S.M.D. max 1.0 to 2.9 inches
- no moisture check to growth of most crops

Class III — S.M.D. max 3.0 to 4.9 inches
- moisture check likely to most crops

Class IV — S.M.D. max 5.0 inches or more
- drought conditions

Ignoring the variation in transpiration as a second order influence we find the following frequency distributions (in years in 20):

Average Annual Rain	I	II	III	IV
21	0	1.0	12.3	6.7
23	0	1.8	12.2	6.0
25	0	2.7	12.0	5.3
27	0	3.6	11.8	4.6
29	0	4.5	11.6	3.9
31	0	5.4	11.4	3.2
33	0.4	5.9	11.2	2.5
35	0.8	6.4	11.0	1.8
37	1.3	6.8	10.8	1.1
39	1.7	7.3	10.5	0.5
41	2.1	7.8	10.1	0
43	2.5	8.3	9.2	0
45	2.9	8.8	8.3	0
50	4.0	10.0	6.0	0
55	5.1	10.4	4.5	0
60	6.1	10.4	3.5	0
65	7.1	9.9	3.0	0
70	8.2	9.3	2.5	0
75	9.2	8.8	2.0	0

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell

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